TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. CHINOOK DRYDOCKING

CONTRACT NO. 00-7073

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TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. DRYDOCK VESSEL

{MAINTENANCE}

M.V. CHINOOK Vessel Particulars:
Length: 143'-3", Beam: 39'-4", Draft: 5'-0", Gross Tons: 99.

A. Drydock Vessel for cleaning, painting, inspections, the Work specified herein, and any necessary repairs.

B. Using **Attachment No. 2**, WSF Dwg. No. 4773-01-16, Rev. C, CHINOOK CLASS, AMD/D.C.I. 385 Docking Plan, dated 7/7/97 as a guide, block the Vessel to expose the last used block positions **Attachment No. 3**, Chinook Block Position. Provide a drawing to the WSF Inspector indicating the new block positions used. Blocking should allow free access to the inlet tunnels and all Sea Suction Inlets.

C. The Vessel shall be docked in such a way as to allow the Bird Johnson J650 Water Jets to be removed (if required) for maintenance.

2. TEMPORARY SERVICE
{MAINTENANCE}

NOTE:

Welding of temporary fixtures or attachments (handrails, stanchions, pad eyes etc.) **IS NOT PERMITTED** without prior approval of the WSF Inspector and Vessel Staff Chief Engineer.

A. Install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touchtone service if available from the Contractor's telephone system.

B. Provide and maintain electricity, water, safe lighted gangway and trash removal services while Vessel is in the Contractor's facility.

C. Provide Safety and Security for the entire Vessel throughout this Contract period until such time as the WSF has accepted redelivery of the Vessel. Every reasonable precaution shall be taken to protect the Vessel from the hazards of fire, flooding, pilferage, malicious damage, and other events including cataclysmic phenomena of nature.

D. Provide and maintain comprehensive and effective fire prevention and fire detection, and fire fighting programs and systems sufficient to ensure the safety and integrity of the Vessel. Provide personnel trained in shipboard fire fighting techniques and also trained to cooperate with and assist local fire fighting organizations. Provide sufficient shore fire lines to ensure an adequate supply of fire fighting water, at sufficient pressure, and maintain an adequate number of tested fire-hoses aboard the Vessel to effectively fight fires at any location in the Vessel.

E. Provide and maintain portable fire extinguishers in sufficient quantity, and of the appropriate type, to combat local fires of any class. Provide sufficient fire watches, including roving watches as may be required, to ensure that fires that may be inadvertently started by welding sparks or heat, electrical malfunction, or spontaneous combustion are detected, reported and promptly extinguished.

3. VOIDS TANK INSPECTION

{MAINTENANCE}

A. Open the eight (8) voids for inspection by WSF and USCG Inspectors.

B. Provide, and maintain for the duration of the job, a Marine Chemist Certificate for "SAFE FOR WORKERS TO ENTER".

C. Provide ventilation and temporary lighting for inspection, and any additional work resulting from inspection. Upon completion of inspection, close up the voids and tanks in good order, using new gaskets.

4. HULL ANODE RENEWAL

{MAINTENANCE}

CAUTION:

Do not use any anti-seize product that contains copper as a component of the product.

A. Remove the existing zinc anodes and install the following new Contractor supplied bolt-on zinc anodes, using new nylock mild steel nuts and 316 stainless steel bolts to secure the anodes in place as per **Attachment No. 4**, WSF Dwg. No. 4773-02-94 Rev. E, CHINOOK CLASS AMD/D.C.I. 385, Cathodic Protection Arrangement, dated 6/19/97.

B. Clean zinc anode connecting plate and/or hull to ensure good contact between anode and Vessel hull.

NOTE

Anode I. D. numbers are from Harbor Island Supply.

a) Thirty-two (32) 6" Dia. x 1" (one (1) to each stud on the Buckets and Nozzles). ZEP-B-6.

b) Two (2) 1⅜" x 3" x 9" (one (1) in each Sea Chest of Jet Room). ZTS-5.

c) Twelve (12) 1¼" x 3" x 12" (four (4) each on Port and Stbd (total of 8), and one (1) on each Fwd and Aft sea chest (each engine room) (total 4). ZSS-12.

d) Four (4) 1⅜" x 3" x 9" (two (2) on the inboard side of the Port and Stbd. Hulls). ZTS-5.

C. Broken anode mounting studs on jet units shall be replaced by welding on 316 stainless steel hex head bolts of appropriate size. For purposes of bidding, plan on replacing six (6) studs.

NOTE:

Welding shall not commence until approval is obtained from WSF Inspector and Vessel Staff Chief Engineer. USCG certified welders for this material and position shall conduct all welding. Contractor shall provide certification certificates of welder prior to any welding on this vessel.

5. SEA VALVE INSPECTION

{MAINTENANCE}

A. Remove the below listed sea valves, clean, perform an inspection, and in the presence of the WSF Inspector, USCG Inspector, and the Vessel Staff Chief Engineer check all valves for mechanical operation and condition of the valve seats and seals. Provide and install new seat and seal kits for all butterfly valves. Check valve disc to valve seat contact for proper seating. Provide the WSF Inspector with three (3) copies of a written report of the inspection results.

Qty	Service	Size	Type	Model
1	Sea Water Supply	5"	Butterfly	Norris R3021-22A-2RM SS
1	Sea Water Supply	5"	Butterfly	Norris R3021-22A-2RM SS
1	Sea Water Supply	5"	Butterfly	Norris R3021-22A-2RM SS
1	Sea Water Supply	5"	Butterfly	Norris R3021-22A-2RM SS
1	Sea Chest Fire Pump Valve	2.5”	Butterfly	Norris R3021-22A-1RM SS
1	Sea Chest Fire Pump Valve	2”	Butterfly	Norris R3021-22A-1RM SS
2	Overboard Fire/Bilge Pumps	2”	Butterfly	Norris R3041-22A-1RM SS
2	Bilge Overboard Discharge	2”	Butterfly	Norris R3041-22A-1RM SS
2	Bilge Crossover Valve	2”	Ball	Milwaukee Valve Company BA-360 SS

B. Before reinstallation of the Sea Water Supply valves, conduct a high-pressure water lance cleaning of the raw water piping main in both Engine Rooms. Using **Attachment No. 5**, WSF Dwg. No. 4773-58-10 Rev.B, CHINOOK CLASS, AMD/D.C.I. 385, Seawater Cooling Arrangement & Details, Dated 6/24/97, as a guide disconnect the flex connection at each main and auxiliary engine and flanged takedown joints as required to accomplish this cleaning. Piping shall be reassembled using new gaskets.

C. Clean, by pressure washing, all flanges and piping associated with the removed valves, from the flange to the hull. Inspect piping and flanges for deterioration. Provide the WSF Inspector with three (3) copies of a written report of the inspection results.

D. Prior to reinstallation of the valves, in the presence of the WSF Inspector, USCG Inspector, and the Vessel Staff Chief Engineer hydrostatically test all new and repaired valves at a pressure of 50 PSI.

E. After inspection, reassemble and install all valves, using new, Contractor furnished stainless steel, bolts, nuts, washers and gaskets on all valve flange connections.

F. Inspect for water leakage of covers and new anodes. Any leakage will be repaired at the Contractor's expense.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

(ATTACHMENT NO. 1)

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries' Marine Coating Specification 1/03 unless otherwise specified in the following Specifications.

6. FRESH WATER WASH OF VESSEL'S HULL
{MAINTENANCE}

A. Upon Drydocking Vessel, and while the hull is still wet, perform a Low-Pressure Water Cleaning (LP WC) at 3,000-3,500 PSI in accordance with SSPC-SP 12/NACE 5. The wand shall be held no more than twelve inches (12") from surface being washed. Water wash both hulls from guard to the keel, including all horizontal and vertical surfaces of the guard, flat keel, sea chests, tunnel, excluding the planking between the hulls, and water jets, strainer plates, and all other exterior components of the Vessel that are part of the Vessel hull. The wash shall leave no visible growth or residue after the hull dries from washing.

B. Prior to water wash, remove sea suction strainer plates from the hull, the inline strainer baskets from the interior piping, and accomplish a high pressure water lance cleaning of the piping from the inline strainer basket housing to the hull, including strainer plates and baskets. Upon completion of all related work and inspections, reinstall the sea suction strainer plates and baskets, and all other removed items.

NOTE:

Ensure engine and generator exhaust pipes are covered prior to starting the wash. Ensure that Steering and reversing ram, hoses, electrical fittings and shaft seals are protected prior to starting the wash. Prior to the start of the water wash, conduct a cover up inspection in the presence of the WSF Inspector and the Vessel Staff Chief Engineer.

7. PREPARATION OF VESSEL HULL FOR GRIT BLASTING

{ MAINTENANCE }

NOTE:

Care shall be taken to avoid damage to the CAPAC anodes and reference cell. The anodes are located at between frames twenty-four (24) and twenty-five (25) inboard side of Port and Starboard hulls, approximately two feet (2') above the keel. The reference cell is located approximately between frames ten (10) and eleven (11) inboard side on the Port and starboard hulls, approximately two feet (2') above the keel.

A. Provide covering and protection on propellers, propeller bearings, exposed shafting, CAPAC anodes and reference cells, all through-hull penetrations and entrance ways to protect and prevent grit blast material from causing damage or entering the Vessel. Blank the main sea chest openings from inside while the valves are removed for maintenance, so the valve mounting flange may be painted on the inside.

B. Prior to Blasting and upon removal of protective items an inspection will be required by the Contractor, WSF Inspector and Vessel Staff Chief Engineer.

8. BLASTING AND ANTI-CORROSION COATING OF THE HULL {MAINTENANCE}

NOTE:

For bidding purposes, assume that **2,000 Square Feet** of hull will require grit blasting to SSPC-SP6, "Commercial Blast Cleaning." Grit blasting material shall be of non-ferrous material, 30 Mesh Garnet or equal. Upon completion of grit blast cleaning, the Contract will be adjusted upward or downward to account for the actual scope of the grit blasting authorized by the WSF Inspector. Feather all loose or hard paint edges.

NOTE:

Steering and reversing ram hoses, electrical fittings, and shaft seals must be protected from hull cleaning and blasting.

NOTE:

The Contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting only if the hull profile is taken and is within the required profile in **Attachment No. 1** and approved by the WSF Inspector.

A. Prepare areas of abrasion and corrosion on the hull from below the guard down to the keel, including flat keel surface, sea chest, strainer plates and rudders, to an SSPC-SP6, Commercial Blast Cleaning as authorized by the WSF Inspector.

B. The existing coating, for at least two inches (2") bordering the blasted area, shall be feathered to a smooth surface.

NOTE:

Interceptors are NOT to be painted.

C. Apply one (1) spot coat of International, INTERGARD EPOXY red, No. FPL274/FPA327 at a minimum of 6 mils (DFT), to prepared areas of the hull.

D. Apply one (1) spot coat of INTERNATIONAL, INTERGARD EPOXY gray**,** No. FPY999/FPA327 at a minimum of 6 mils (DFT), to prepared areas of the hull.

9. COATING OF INLET TUNNELS / SEA CHEST

{MAINTENANCE}

NOTE:

For the purpose of bidding assume **80 Square Feet** of the inlet tunnels and/or sea chests to abrasively blast via means of glass beads, recycled glass, aluminum oxide or red garnet to clean abraded and disturbed areas. The Contract will be adjusted upward or downward for actual scope authorized by WSF Inspector.

A. Mask off jet inlets and shafts to protect cutlass bearings, impeller couplings and impeller hub seals. Prior to start of blasting, WSF Inspector and the Vessel Staff Chief Engineer will inspect cover up. All blast media used shall not have been used for blasting ferrous material, and will be certified ferrous free.

B. Remove failed coatings in all water jet inlet tunnels and/or sea chests, as required by the WSF Inspector.

C. Apply DuraFlake to the areas of inlet tunnel and/or sea chests prepared, to obtain a minimum of 40 mils (DFT). Supervision of the Duraflake installation shall be obtained from Corrosion Specialists Incorporated. The contact is Mr. Brad Bradshaw, (360) 568-2098.

10. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING (SPOT COAT)

{MAINTENANCE}

NOTE:

For purpose of bidding assume that **1200 Square Feet** of below the waterline hull will require coating. The Contract will be adjusted upward or downward to account for the actual scope authorized by the WSF Inspector.

A. Apply one (1) coat of INTERNATIONAL Interviron BRA 640, anti-fouling to a minimum of 5 mils (DFT), of Contrasting color, to all areas below the waterline painted in Item 8, “Blasting and Anti-Corrosion Coating of the Hull, below the Water Line”.

11. FULL COAT ANTI-FOULING

{MAINTENANCE}

A. Apply one (1) full coat of INTERNATIONAL, Interviron BRA 642, Black anti-fouling to a minimum of 5 mils (DFT) below the Waterline.

12. DRAFT AND HULL MARKINGS

{MAINTENANCE}

A. Apply one (1) coat of International 4454 Shark White antifouling to a minimum of 2 mils (DFT), to all draft marks.

13. PAINTING OF THE HULL ABOVE THE WATERLINE, TOP COAT

{MAINTENANCE}

NOTE:

For purpose of bidding assume that **800 Square Feet** of above the waterline hull will require coating. The Contract will be adjusted upward or downward to account for the actual scope authorized by the WSF Inspector.

A. Above the waterline to sheer and guard rail, furnish and apply one (1) coat of Black, INTERNATIONAL Interthane 990 series paint to obtain 2 mils DFT, to all areas prepared with A/C coating.

14. TOWING OF VESSEL

{MAINTENANCE}

A. Tow Vessel from its mooring at Eagle Harbor on Bainbridge Island to the shipyard that is awarded the Contract.

NOTE:

The M.V. Snohomish is moored outside of the M.V. Chinook and will require to be moved out and tied-up abreast of the Barge.

B. Tow Vessel back to its mooring at Eagle Harbor when work is completed.

15. TOPSIDE AND DECK, CLEANING

{MAINTENANCE

A. Clean all Exterior Structure including mast, overheads, inboard gunwales above the main deck and the all exterior decks.

B. Apply cleaner to all areas via deck brush or bug sprayer. Cleaner to be GMA571 degreaser with four (4) parts water to one (1) part cleaner solvent.

C. Brush areas to Scrub and Clean. Do not allow cleaner to dry on the surface.

D. Fresh water wash to remove cleaner, salts and contaminates.

E. Upon completion of all work clean all windows leaving no streaks, haze marks or scratches.

(END)